

Midwestern ethanol plants use much less water than western plants, study says

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Ethanol production in Minnesota and Iowa uses far less water overall than similar processes in states where water is less plentiful, a new University of Minnesota study shows.

The study, which will be published in the April 15 edition of the journal *Environmental Science and Technology*, is the first to compare water use in corn-ethanol production on a state-by-state basis. The authors used agricultural and geologic data from 2006-2008 to develop a ratio showing how much irrigated water was used to grow and harvest the corn and to process it at ethanol plants.

Among the major ethanol-producing states, Iowa uses the least water, with about six gallons of water used for each gallon of ethanol. Minnesota, which in 2007 produced roughly a third as much ethanol as Iowa, uses about 19 gallons of water per ethanol gallon.

States where irrigation is needed to grow corn fared far worse than those where almost no corn is irrigated. California, which produces only a tiny fraction of the nation's ethanol but irrigates most of its [corn](#), is the largest water consumer, at about 2,100 gallons of water per gallon of ethanol. South Dakota, with total production roughly equal to Minnesota's, uses about 96 gallons of water to produce one gallon of ethanol.

Water usage could be an important factor in policy decisions about where ethanol plants are built. The study "highlights the need to

strategically promote [ethanol](#) development in states with lower irrigation rates and less groundwater use," the authors say. All the states with high water usage ratios are classified by the federal government as likely to experience water shortages in coming years.

"Both energy security and water security are too important; improvement of one of them should not be made at the expense of another," said Sangwon Suh, an assistant professor in the university's department of [bioproducts](#) and biosystems engineering and the study's lead author.

"Understanding the dependence of [biofuel](#) on [water](#) and its spatial disparity will be critical in implementing the biofuel policy in the United States."

Source: University of Minnesota ([news](#) : [web](#))

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